

**PROJECT FINAL REPORT**

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## 4.1 Final publishable summary report

### 4.1.1 Executive summary

The 6th European Aeronautics Days (AERODAYS) 2011 were the largest Aerodays event to date, following its successful predecessors that took place in Brussels (1991), Naples (1993), Toulouse (1997), Hamburg (2001) and Vienna (2006). AERODAYS 2011 took place from 30th March to 1st April in Madrid organized together with the European Commission and CDTI, and with the support and sponsorship of the regional government of Madrid and industrial stakeholders.

The event attracted the major players at all levels related to aeronautics RTD, hence Aerodays was a great opportunity to report on the latest advances in aeronautics world-wide and to encourage new partnership in collaborative projects. That made the conference the perfect scenario to present the Europe's Vision for Aviation "Flighpath 2050" the European strategic for future air transport and also the Joint European Effort for the New SRIA (Strategic Research Innovation Agenda) of ACARE.

Approximately 1400 people from Europe and beyond were registered during Aerodays conference and exhibition, a total of more than 3000 people attended during the three days of the whole event. Up to 45 different nationalities were presented during the conference, the vast majority from Europe, but with an importance presence of international countries beyond Europe (United States, Russia, China, Mexico...).

More than 300 speakers participated at the conference coming from both institutional and industrial entities from all Europe and overseas. The sessions were divided in two main blocks, first, seven high level sessions (plenaries) that focused on the sustainability of air transport, how the global market is evolving, mastering the future of aeronautics and the future of air traffic management, these topics were presented by high level personalities of the main aeronautics stakeholders and were aligned with the Research and Innovation goals in the European Union. The technical programme included up to 56 parallel sessions related to the strategic activities of the European RTD Seventh Framework Programme.

In terms of media coverage, more than 90 international journalists attended the conference that generated up to 500 articles, news and reviews in general and specialist media. Two main press conferences with high level personalities were organised during Aerodays to present the Vision Flightpath 2050.

There were more events organized around Aerodays as Technical Exhibition, Students Competition, Parallel meetings, Paper plane competition, Brokerage event (with more than 150 participants), Technical visits that include visits to the facilities of INDRA, AIRBUS, Barajas Airport Terminal 4, INTA, IBERIA... and so on.

Also a social programme was programmed during Aerodays for the participants. The social programme included an official dinner in the Thyssen-Bornemisza Museum, a visit to the Aeronautical museum and the Infante the Orleans foundations among others...

#### 4.1.2 Summary description of project context and objectives

The sixth European Aeronautics Days took place from 30th March to 1st April 2011 in Madrid, following its successful predecessors that took place in Brussels (1991), Naples (1993), Toulouse (1997), Hamburg (2001) and Vienna (2006).

The event brought together aeronautics stakeholders, ministries, agencies and R&D centres from all over Europe and overseas to network, present their latest research results and discuss common future R&D projects.



Organized by CDTI (Centre for the Development of Industrial Technology in Spain) and the European Commission (Directorate General for Research), Aerodays 2011 provided a perfect opportunity to present and disseminate information about EU-funded RTD results, and was in line with the EU goals of creating a Single European Sky and a European Research Area, and of finding innovative approaches to sustainable aviation in a global environment. I was a well balanced combination of the political top-down on RTD policies related to Aeronautics and Air Transport and the bottom-up presentations of future oriented technological developments.

The Aerodays 2011 event also provided a world-class conference for information exchange and dissemination of EU-funded R&D results in aeronautics, developing strong links with partners around the world, so that Europe could benefit from the worldwide progress of knowledge, contributed to global development and took a leading role in international initiatives to solve global issues.

The event showed the opportunities that the aeronautics sector gives, due to its strategic character and high potential. The participation of the main European representatives, both institutional and industrial-, of the aeronautics and air transport sector including airports and airlines, as well as experts from fields such Space and Security is expected.

It is worthy to be mentioned that the impact to be reached within this event would never was obtained through a national or local approach, and hence the European dimension is crucial for obtaining an outstanding success; furthermore, this event

should optimize and open European, national and regional research programmes in order to support and coordinate the best research throughout Europe through strategic programmes to address major challenges together.

This support action had the aims to contribute to the implementation of the Framework Programmes and the preparation of the future research community and technological development policies and look for synergies with other policies, as well as stimulate, encourage and facilitate the participation of SMEs, civil society and other actors.

The objectives of Aerodays 2011 were:

- To link the political messages of key stakeholders with the developments in aeronautics and air transport;
- To report on the latest advances in aeronautics world-wide;
- To encourage new partnerships in collaborative projects;
- To present technological achievements and ongoing research and technological development that is carried out under the EU's Framework Programmes, national and international research actions, and European large scale technology initiatives (such as JTI Clean Sky, SESAR and Galileo);
- To present a forum for the review process of the Vision 2020 goals and the Aeronautics Strategic Research Agenda;
- To offer an opportunity to formulate a vision on the future of aeronautics, including FP8 and the ACARE Vision 2050.

The main conference features

- Up to 1.300 participants Europe and overseas;
- Keynote and plenary speeches by main political actors involved in aeronautics from the European Commission, Member States, European Parliament, Spanish Ministries and regional governments, industry and research;
- Main players from the aeronautics industry and research community world wide;
- Substantial parallel sessions structured by the challenges of SRA2 and addressing key activities fo FP7;
- Special sessions on topics like international co-operation, national activities, GARTEUR, JTI Clean Sky and SESAR;
- Attractive side events: technology and poster exhibitions and information stands;
- Special meetings such as ACARE Plenary, AirTN2 or projects meetings (Cooperateus, EARPG EASA, etc.);
- Conference excursions to Spanish aerospace facilities.

#### **4.1.2.1 Description of the main S&T results/foregrounds**

#### **4.1.2.2 Programme of the conference**

##### Wednesday, 30th March 2011

09:00 Registration and Welcome Coffee

10:00 - 12:00 Opening Ceremony and Keynote Session: Innovation for Sustainable Aviation in a Global Environment

12:15 - 13:30 Lunch

13:30 - 14:25 Plenary Session 1: Sustainable Air Transport

14:35 - 16:05 Parallel Sessions 1

16:05 - 16:35 Coffee Break

16:35 - 18:05 Parallel Sessions 2

20:30 Conference Reception Dinner at the Thyssen-Bornemisza Museum, offered by the Regional Government of Madrid

##### Thursday, 31st March 2011

08:15 - 09:30 Plenary Session 2: How the Global Scene is Evolving

09:40 - 11:10 Parallel Sessions 3

11:10 - 11:40 Coffee Break

11:40 - 13:10 Parallel Sessions 4

13:10 - 14:20 Lunch

14:20 - 15:15 Plenary Session 3: Mastering the Future in Aeronautics

15:25 - 16:55 Parallel Sessions 5

16:55 - 17:25 Coffee Break

17:25 - 18:55 Parallel Sessions 6

19:00 Cocktail offered by the European Commission

##### Friday, 1st April 2011

08:30 - 09:30 Plenary Session 4: The Future of Air Traffic Management

09:30 - 10:00 Coffee Break

10:00 - 11:30 Parallel Sessions 7

11:35 - 12:50 Closing Session: Preparing the Future of Aviation. A Joint Effort of Europe

12:50 - 14:00 Cocktail

14:00 Visit to the Aeronautics & Astronautics Museum

#### 4.1.2.3 Conference structure

An **opening ceremony** was done by very high level political speakers. Among them, the participation of representatives of European Union (Chairman of the Research Council, European Parliament, European Commission), Spanish Ministries and Regional Politicians also was done. A welcome of the assistants to the event by giving high level and global political speeches, as well as press representation was realized.

The event was structured around four **plenary sessions** that covered aeronautical aspects that have global interests both in a political and in a technical level. The speakers in charge of covering the plenary sessions came from the Industry, the Research Community and other International Institutions, and provided an appropriate introduction of the technical sessions that were coming after. The Plenary sessions were organized in such a way that every assistant had the opportunity to listen to them.

The Plenary sessions introduced a certain number of **parallel sessions**. The parallel sessions covered mainly research and technological aspects, and speakers from the Industry and Scientific Community were invited to give lectures about their areas of expertise. The parallel sessions covered, on one side, aspects related to the main activities that were dealt within the Thematic Programme Transport (including Aeronautics) of the Seventh Framework Programme. On the other side, several specific areas were covered during the Parallel sessions; Some of them are mentioned here:

- The greening of air transport.
- Increasing time efficiency.
- Ensuring customer satisfaction and safety.
- Improving cost efficiency.
- Protection of the aircraft and passengers.
- Pioneering the air transport of the future.
- International Cooperation.
- Research & Innovation Policy in Europe.
- 'Clean Sky' Forum.
- SESAR Forum.

Similar to the opening ceremony, the **closing ceremony** had a high political level. The speakers to take part in it gave an overview of the features covered within the event. They also showed the political lines that should be followed in the future to make the best of the sector.

Under this paragraph is showed the programme overview and the parallel sessions overview of Aerodays 2011.





# Aerodays 2011

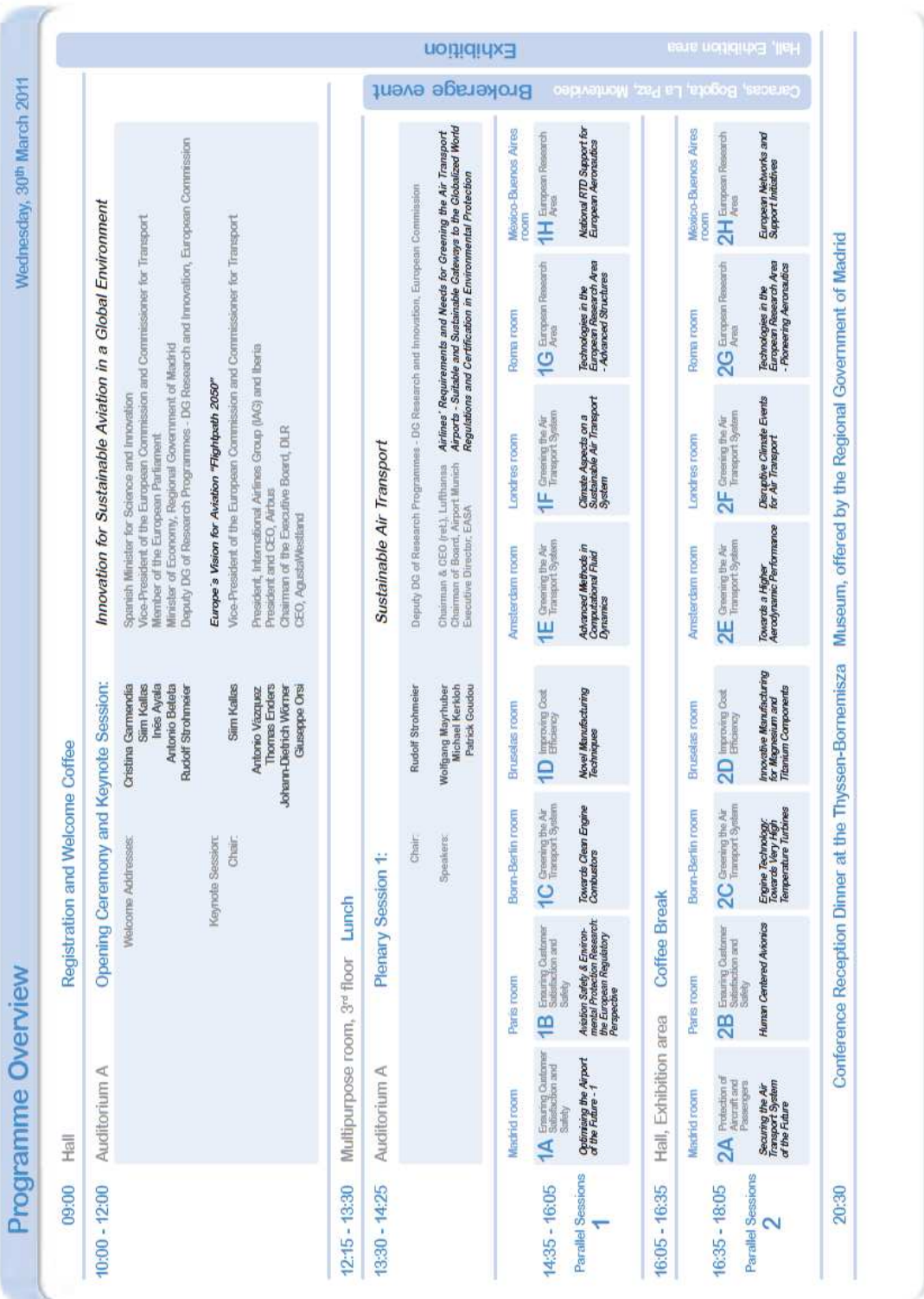


Figure 1. Programme Overview. Wednesday 30<sup>th</sup> March



# Aerodays 2011



Programme Overview		Thursday, 31st March 2011	
08:15 - 09:30	Auditorium A	<b>Plenary Session 2:</b> Chair: Arturo Azorra Speakers: Michael Ryan, Vadim Razumovsky, Zuoming Lin, Jiawon Shin	
<b>How the Global Scene is Evolving</b> Director General, DDTI VP, Bombardier Aerospace Belfast GM, Secretary, Supersjet International President, AVIC Assoc. Admin., NASA Aeronautics			
09:40 - 11:10	Madrid room	Paris room	Mexico-Buenos Aires room
3A	3B	3C	3D
Ensuring Customer Satisfaction and Safety	Ensuring Customer Satisfaction and Safety	Greening the Air Transport System	Improving Cost Efficiency
Optimising the Airport of the Future - 2	Avionics - Act to Paving	Key Engine Technologies	Numerical Simulation Tools for Aircraft Design and Manufacturing
3	Coffee Break		
11:10 - 11:40	Hall, Exhibition area		
11:40 - 13:10	Madrid room	Bonn-Berlin room	Brussels room
4A	4B	4C	4D
Increasing Time Efficiency	Ensuring Customer Satisfaction and Safety	Improving Cost Efficiency	Improving Cost Efficiency
Air Traffic Operations - 1	Avionics Architecture to Support Communication, Navigation and Surveillance	Advanced Manufacturing Techniques for Engine Components	Aircraft Structural Health Monitoring
4	Coffee Break		
13:10 - 14:20	Multipurpose room, 3 <sup>rd</sup> floor		
14:20 - 15:15	Auditorium A	<b>Plenary Session 3:</b> Chair: Joachim Stodtruch Speakers: Charles Champion, John J. Tracy, Eric Dauribat	
<b>Mastering the Future in Aeronautics</b> President of CEAS and Member of the Executive Board of DLR Exec Vice-President Engineering, Airbus Chief Technology Officer, Boeing Executing Director, JTI Clean Sky			
15:25 - 16:55	Madrid room	Paris room	Mexico-Buenos Aires room
5A	5B	5C	5D
Increasing Time Efficiency	Ensuring Customer Satisfaction and Safety	Greening the Air Transport System	Improving Cost Efficiency
Air Traffic Operations - 2	Systems for Safer Flight Guidance and Control	Innovative Engine Architecture	Composite Aerostructures: New Design Principles
5	Coffee Break		
16:55 - 17:25	Hall, Exhibition area		
17:25 - 18:55	Madrid room	Bonn-Berlin room	Brussels room
6A	6B	6C	6D
SESAR Forum (I)	Improving Cost Efficiency	Greening the Air Transport System	Improving Cost Efficiency
SESAR - Technology	Electro-mechanical Devices and Photonic Systems	Aerodynamics and Heat Transfer of Advanced Engine Components	Composite Aerostructures: Innovative Maintenance and Repair
6	Coffee Break		
19:00	Hall, Exhibition area		

Figure 2. Programme Overview. Thursday 31<sup>st</sup> March



# AeroDays 2011



Programme Overview		Friday, 1st April 2011	
08:30 - 09:30	Auditorium A	Plenary Session 4: <b>The Future of Air Traffic Management</b>	Director Air Transport, DG Mobility and Transport, European Commission  Director General, Eurocontrol Director, FAA Europe, Africa & Middle East Executive Director, SESAR JU President, AENA  Matthew Baldwin  David McMillan Steve Creamer Patrick Ky Juan Ignacio Lema
09:30 - 10:00	Hall, Exhibition area	Coffee Break	
10:00 - 11:30	Madrid room	7A SESAR Forum (II)	
	Paris room	7B Ensuring Customer Satisfaction and Safety	
	Bonn-Berlin room	7C Creating the Air Transport System	
	Brussels room	7D Improving Cost Efficiency	
	Amsterdam room	7E Young Scientists Competition	
	London room	7F Improving Cost Efficiency	
	Roma room	7G Pioneering the Air Transport of the Future	
	Mexico-Buenos Aires room	7H European Research Area	
11:35 - 12:50	Auditorium A	Closing Session: <b>Preparing the Future of Aviation. A Joint Effort of Europe</b>	Chair: Francis Quentin  Closing Addresses: Maire Geoghegan-Quinn Juan Tomas Hernani Domingo Ureña Jean-Paul Herleman Regino Miramichel
12:50 - 14:00	Hall, Exhibition area	Cocktail	
14:00		Visit to the Aeronautics & Astronautics Museum (buses leave from the Conference Centre entrance)	

Figure 3. Programme Overview. Friday 1<sup>st</sup> April



Figure 4. Parallel Sessions Overview

## **The opening ceremony:**

Beside the welcome of the aeronautics and air transport community from all over the world, the Europe's Vision for Aviation "Flightpath 2050" was introduced. From politics the scene will be set for the steps for innovation needed to ensure that the European aviation will continue to play its significant role in the global air transport system.

### **Speakers:**

- Cristina Garmendia, Spanish Minister for Science and Innovation
- Siim Kallas, Vice-President of the European Commission and Commissioner for
- Inés Ayala, Transport Member of the European Parliament
- Antonio Beteta, Minister of Economy, Regional Government of Madrid
- Rudolf Strohmeier, Deputy Director General of Research Programmes – DG Research -and Innovation, European Commission

A Press Conference with the Spanish Minister for Science and Innovation Cristina Garmendia and speakers of this session took place after the session.

### **Keynote session:**

In the 'Vision for 2020' Europe's aviation community agreed for the first time on ambitious goals. Ten years later a revision and an extension to Europe's Vision for Aviation "Flightpath 2050" was undertaken by the High Level Group for Aviation Research. This new Vision was presented at the Aerodays 2011. In the view of the Vision "Flightpath 2050" and its goals, the keynote addresses may highlight the perspectives of the speakers including the specific priorities and challenges for their companies or research establishments and for their industry sector.

**Chair:** András Siegler, Director RTD-H Transport, European Commission

### **Speakers:**

- Antonio Vázquez, President. International Airlines Group (IAG) and Iberia
- Thomas Enders, President and CEO Airbus
- Johann-Dietrich Wörner, Chairman of the Executive Board DLR
- Giuseppe Orsi, CEO Augusta Westland

A Press Conference with Commissioner Siim Kallas and all speakers of this session took place after the session (12h15, Press room 1st floor right).

## **Plenary Session 1: Sustainable Air Transport**

The society asks increasingly for an air transport system, which is sustainable in the long-term, but also improves its efficiency while enhancing safety standards. Increased noise restrictions and the introduction of the Emission Trading Scheme (ETS) for Aviation by the EU are indicators for this.

This places growing challenges to the key operators as airlines and airports. Enhanced greening and improved efficiency have to be performed at while improving safety and security in air transport.

The speakers of the sessions consist of members of the High Level Group for Aviation Research or of the Aviation Platform of DG MOVE and Europe's safety regulator; they explained their specific requirements and future oriented activities for the greening of the air transport system as a key sector expecting a remarkable growth for the next decades.

**Chair:** Rudolf Strohmeier, Dep. Director General of Research Programmes DG Research and Innovation, European Commission

**Speakers:**

- Airlines' Requirements and Needs for Greening the Air Transport Wolfgang Mayrhuber, Chairman & CEO (retired), Lufthansa
- Airports: the Gate to a Sustainable Air Transport Michael Kerkloh, Chairman of Board, Airport Munich
- Regulations and Certification in Environmental Protection Patrick Goudou, Executive Director, EASA

**Plenary Session 2: How the Global Scene is Evolving**

The civil aviation grows globally with more than 5% per year in average. This leads to a continuous demand for new competitive and environmentally friendly aircraft.

Aeronautics industry in nearly all leading economies aims to be prepared with the right products for this demand, specially in the regional aircraft category and for the trunk airliners.

The airlines as the customers work also under fears competition and new aircraft have to comply with the demand for high efficiency and environmental sustainability under increasing safety and reliability requirements.

In this session international speakers were invited to present the approach and vision of their companies for the technology requirements, market forecast and customers' needs.

**Chair:** Arturo Azcorra, Director General CDTI

**Speakers:**

- The Future is Now Michael Ryan, Vice-President Bombardier Aerospace
- The Superjet, an Example of European Collaboration Carlo Lodgi, CEO Superjet International (invited)
- Opportunities & RTD Strategies of Chinese Civil Aviation Industry Zuoming Lin, President AVIC
- Future of Aviation: Research & Development Needs Jaiwon Shin, Associated Administrator NASA Aeronautics

### **Plenary Session 3: Mastering the Future in Aeronautics**

The society asks increasingly for an air transport system, which is sustainable in the long-term, but also safe, cost efficient and reliable. The global competition is increasing on the civil aircraft market. The need for new technologies requires a joint on-time effort of the entire technology supply chain. The major system integrator industry has to balance all risks and challenges. Therefore reliable technology validation is needed for reaching the required technology readiness level.

Based on their industry tradition, the USA and Europe follow different approaches but are aiming for similar goals in civil aviation, which operates globally. With the Joint Technology Initiative 'Clean Sky' Europe initiated a new dimension of technology integration and validation.

**Chair:** Joachim Szodruch, Co-chairman ACARE

#### **Speakers:**

- The Future of Aeronautics: A European Perspective Charles Champion, Executive Vice-President Engineering Airbus
- Future Aviation Developments: US Perspective John J. Tracy, Chief Technology Officer Boeing
- Tackling the Environmental Challenges to Aeronautics Eric Dautriat, Executing Director JTI Clean Sky

### **Plenary Session 4: Air Traffic Management**

The steadily increasing air traffic creates a rising challenge to the highly congested areas of Europe and the USA. The huge efforts for NextGen in the USA and the Single European Sky will lead to air transport systems of the future with an enlarged capacity. They will enhance safe and more environmentally friendly civil aircraft operations. Beyond new technologies, developments massive investments by the air traffic operators are necessary, supported by the know-how of research and industry. The European Joint Undertaking SESAR aims to develop all necessary technological and operational steps for a modern ATM system in Europe.

**Chair:** Daniel Calleja, Deputy Director General DG Enterprise, European Commission

#### **Speakers:**

- The Single European Sky in a Global Aviation Network David McMillan, Director General. Eurocontrol
- NextGen – the ATM Effort of the US Victoria Cox, Senior Vice-President for NextGen & Ops Plan, FAA
- The Future of Air Traffic Management: SESAR Patrick Ky, Executive Director. SESAR JU
- European ANS Performance Scheme: a New System Fostering the Changes in ATM Juan Ignacio Lema, President. AENA

## Closing Session: Preparing the Future of Aviation - A Joint Effort of Europe

The Vision for 2020, prepared by a high-level Group of Personalities in 2000, initiated the Advisory Council for Aeronautics Research in Europe (ACARE) developing the Strategic Research Agenda (SRA) for Aeronautics and Air Transport. This SRA constitutes inputs to the definition of research and technologies activities on European (Framework Programme, Eurocontrol, etc.), national and industrial level.

The Vision "Flightpath 2050" was expected to provide the guidance for the research and technology priorities for the future of European aviation. The speakers gave their view on how this new vision should shape the research cooperation between all relevant aviation stakeholders in the view of the Innovation Union initiative and the Common Strategic Framework for Research and Innovation (FP8). We heard about each speaker's view of the Vision "Flightpath 2050" as well as its implementation in terms of research and technological priorities.

**Chair:** François Quentin, Co-chairman ACARE

### Closing Addresses:

- Máire Geoghegan-Quinn, Commissioner for Research and Innovation, European Commission.
- Juan Tomás Hernani, Secretary General for Innovation, Spanish Ministry of Science and Innovation.
- Domingo Ureña, President ASD - AeroSpace & Defence Industries Association of Europe and CEO Airbus Military.
- Jean-Paul Herteman, CEO, SAFRAN.
- Regino Moranchel, CEO Indra.

A Press Conference with the Commissioner Máire Geoghegan-Quinn and all speakers of this session took place after the session.

### ➤ General outcomes:

- Up to **1400 registered participants** from **45 different nationalities** were presented during the conferences, the vast majority from EU
- Outstanding presence from other countries: United States, Argentina, Russia, China, India, Turkey, Australia, SouthAfrica, Mexico...
- **56 Parallel sessions** with more than **220 speakers** from **26 different countries**.
  - FP6/ FP7 Technical Sessions 37
  - Clean Sky Forum 2
  - SESAR Forum 2
  - International Cooperation 3
  - European Research Area 3



- ERA–Technology Sessions 4
- Research & Innovation Policy 4
- EASA Session 1
- Young Scientist Prize Winner Session 1

- **Press Conferences:**

• **30th March: Press Conference 1: “Vision Flightpath 2050”**

- Siim Kallas, Vice-President of EC.
- Inés Ayala, Member of the European Parliament
- Thomas Enders, President and CEO Airbus
- Giuseppe Orsi, CEO AugustaWestland

• **1st April: Press Conference 2: “Closing Press Conference”**

- Maire Geoghegan-quinn, EU Commissioner for R&I
- Juan Tomás Hernani, Secretary General for Innovation
- Domingo Ureña, President of ASD
- Jean Paul Herterman, Chairman of the Board SAFRAN
- Rafael Gallego, Executive VP, INDRA

- All the news about Aerodays in every media have been positive as is shown in the next Key ratios:

- News published: 291
- Corporate: 34
- Teletype(Press Agencies): 10
- Print Media: 44
- Radio: 9
- TV: 4
- Digital Media: 190

- **About 90 journalist attended the conference:** Euronews, RAI TV, Sinhua TV, Aerospace International, Aviation Week, Flight Global, Avion Revue, Agencia EFE, Europa Press

#### **4.1.2.4 Other side events within Aerodays 2011**

##### **4.1.2.4.1 Technical visits**

Besides the organization of the conferences mentioned before (Plenary and Parallel Sessions), a number of technical visits to several aeronautical key industries and facilities were realized in the last half day of the event. The specific visits to was offered to the assistants depended on the availability of the industries. The coordinator of this project established the appropriate mechanisms to get in contact with the right persons of those industries to elaborate a right plan that allowed us to visit the most interesting parts of the aeronautical sector in Spain. Due to time constraints, visits to one or another place were allocated to the assistants in strictly order of registration.

#### **EADS-Airbus - Getafe facilities**



Getafe plant visit includes following business units:

**Airbus Military:** Headquartered in Madrid (Spain), the company's facilities are essentially based in Spain. Its main sites are Getafe where the civil Airbus platforms are converted into Multi Role Tanker Transport (MRTT) aircraft.

**Airbus in Spain:** Getafe plant specialises in testing, systems testing, and final assembly of the Horizontal Tailplanes (HTP) for A300/A310, A320 family, and the A330/340 family. The A380 HTP is designed at the engineering facilities in Getafe; parts are manufactured in Illescas and then initially assembled in Getafe.

**CASSIDIAN:** The plant carries out final assembly of the 87 Eurofighters for Spain. Series production of these aircraft started in the summer of 2001. The Getafe plant is also responsible for the maintenance, overhaul and combat efficiency improvement of high-performance military aircraft, including fighter aircraft (AV-8B Harrier, EF-18 Hornet, F-5 Tiger, F-1 Mirage), trainers (Tamiz and C-101 Aviojet), transporters (C-130 Hercules) and maritime patrol aircraft (P-3 Orion).

#### **ITP-Ajalvir facilities**



ITP facilities to be visited in Madrid are those dedicated to assembly of original equipment, such as low pressure turbines and whole engines, and also to maintenance and repair of complete engines. Along the assembly line, the low pressure turbines of the Airbus A380 and Boeing B787 was seen in their route to Rolls-Royce. Depending on the final schedule, some EJ200 or TP400 engines could be seen.

The test facilities consist of mechanical test facilities (proof and ultimate, fatigue test and spit-pit of turbine discs) and up to six engine test beds. A functional mock-up of the vectoring nozzle will be on display, and there will be the chance to play the joy stick. The maintenance facility tour is a unique opportunity to see the strip of many of the small and medium turbo shafts in operation today.

## **INTA**



Founded in 1942, INTA is a Public Research Organization attached to the Spanish Ministry of Defence. INTA carries out experimentation, research, certification and testing activities in aerospace materials, components, equipment, subsystems and systems, acting as laboratory, technology centre and technical service for Spanish and international companies and public organism.

The technical visit at INTA offered an overview of the Institute's activities in the fields of aeronautics and space which was illustrated by specific visits at selected facilities related to R&T for UAV, and atmospheric studies, as well as to the testing of large aerospace structures and very large aircraft engines, along an itinerary of around one and a half hours.

## **AENA - T4 of Barajas Airport**



The most representative facilities have been chosen to show the complex activity daily perform at the Airport. At the beginning of the visit a general overview of the Airport was given to visitors in a conference room at T4. During the walk through the different areas of the terminal visitors entered into the inside of the building to see a part of the Automatic Baggage Handling System and CGA.

The BHS NAT Madrid/Barajas Airport is a system of advanced technology and high process capacity (up to 16.500 bags/hour) which allows a high automation level for handling and inspection of baggage combined with a demanding operational availability.

The CGA (Airport Management Center) coordinates and controls in real time all the activities that are developed in the airport, also monitors the state of the airport and coordinates the necessary actions that must be taken by each area in order to assure a correct operation at all times.

## **INDRA - Torrejón de Ardoz**



Air Traffic Management Systems (ATM/CNS): Indra is a leading company in the international market in Air Traffic Management and control systems. Indra has been supplying Air Traffic Management systems around the world for more than 30 years, having supplied over 1000 Air Traffic Management installations in over 90 countries. The session included the visit of Indra's ATM/CNS facilities in Torrejon.

## **IBERIA - La Muñozza facilities**



Iberia Maintenance has earned a reputation for reliability, thanks to the exhaustive quality control procedures carried out by its technical staff. This staff now numbers about 4,000 people and services Iberia's own fleet and those of another 100 companies. Iberia's aircraft maintenance standards have earned its certification not only from Spain's Civil Aviation authorities but also from the FAA (Federal Aviation Administration) of the United States, among many others. It was awarded with the certificate ISO 9001 – 200 by Aenor in 2003.

Iberia's maintenance staff carries out both scheduled and unscheduled maintenance and repair activities, to keep aircraft in perfect operating condition and, when necessary, to restore them to the maximum levels of reliability. Iberia adheres to a strict programme which complies with all civil aviation regulations. The programme encompasses online inspections and maintenance, minor maintenance, and major overhauls, all at set intervals.

In 2009, it carried 220 C and D aircraft inspections, as well as 208 engine inspections.

## **INDRA - San Fernando de Henares**



Flight Simulators: Indra offers a complete range of products and services for training military and civil aircraft pilots, from the most basic trainers to the most complex simulation systems, including all of the related study, support and maintenance activities. The session included the visit to the following devices and facilities in San Fernando de Henares:

- Airbus 320 Full Flight Simulator Level D.
- Simulator Systems Development Lab.
- Helicopter simulator databases demonstration.

➤ Outcomes:

- Up to 250 people attended to the different technical visits offered.
- The number of people who visited each facility were:
  - EADS-Airbus - Getafe facilities (100 places)
  - ITP - Ajalvir facilities (60 places)
  - INTA (50 places)
  - AENA - Terminal 4 of Barajas Airport (30 places)
  - INDRA - Torrejón de Ardoz (40 places)
  - IBERIA - La Muñozza facilities (25 places)
  - INDRA - San Fernando de Henares (40 places)

#### **4.1.2.4.2 Social events & accompanying persons programme**

##### **Social events**

##### **Wednesday 30th March**

The official dinner of Aerodays 2011 was free of charge for all participants. It was in the form of a reception offered by the Regional Government of Madrid in the Thyssen-Bornemisza Museum at 20h30.

From 20h30 to 21h00 all attendees had the opportunity to privately visit the permanent collection of the Museum. The standing dinner began at 21h00.

To register for the dinner, the assistant had to enter your registration form with your user and password and select the 'Conference dinner' box.

##### **Thursday 31st March:**

The European Commission invited all participants to a reception in the exhibition areas of the conference venue directly after the last sessions of the day. It was a relaxing opportunity for contacts and networking of the aviation community while visiting the numerous stands of research projects, aeronautical institutions, sponsors and young scientists (19h00 – 20h30).

##### **Friday 1st April:**

A free visit to the Aeronautics and Astronautics Museum was foreseen on Friday afternoon.

The Madrid Aeronautics and Astronautics Museum is a space full of History, where one can contemplate the planes that crossed the sky decades ago.

Buses left from the Conference Centre at 14h00 and returned at 17h00, approximately.

This activity had a limited number of places. To register for it, the assistant had to go to the registration form again with your user and password and select the activity.

### **Sunday 3rd April:**

The Infante de Orleans Foundation is a museum of historical planes still capable to fly. It was created in 1989 with the objective of showing the widest collection of historical planes that have played a decisive role in the Spanish aeronautics development.

Nowadays, the collection has 38 planes of 32 different models in perfect conditions to fly.

The Infante de Orleans Foundation organizes, each first Sunday of the month, an air show to make all airplanes of the collection fly, covering the sky of Madrid with silhouettes and engines noise fallen into oblivion...The air show begins with an exhibition on land, followed by the flight exhibition, depending on meteorological conditions.

Everyone can visit the air show on his/her own, but if there was a number of Aerodays participants wishing to attend this event, the Organizing Committee was willing to organize a trip to that place on Sunday 3rd March morning.

### ***Open side Events***

#### **Brokerage**

Main objective of the event was to create a meeting forum for companies, research institutes, universities and other organizations that are actively engaged within the field of Aeronautics. Participants had provided opportunities for collaboration and business based on technology, through aimed-to-agreement bilateral meetings.

Within the framework of AERODAYS 2011- The sixth European Aeronautics Days-, Enterprise Europe Network Madrid organized from 30th to 31st March an international transfer technology day to exchange information between possible technological partners.

The event brought together aeronautics stakeholders, ministries, agencies and R&D centers from all over Europe and overseas to network, present their latest research results and to discuss common future R&D projects.

The person concerned in participate in a bilateral meeting of the transfer technology day to exchange information, had registered the following link, In this link they had to inform almost one technical supply or technical demand:

[www.enterprise-europe-network.ec.europa.eu/public/bemt/home.cfm?EventID=2541](http://www.enterprise-europe-network.ec.europa.eu/public/bemt/home.cfm?EventID=2541)

This information was publicated in a online catalog, continuously updated, this catalog was visited by the brokerage participants for consult the technical supply or demand, and with this information, could prepare the bilateral meeting. All the participants recived a personal schedule with the programmed meetings.

The inscription in Aerodays 2011 was obligated for all the participants in the bilateral meetings of the transfer technology day.

➤ Outcomes:

Up to **150 participants** were registered from 117 different entities ( industry, research centers, universities...), with an outstanding number of overseas international profiles (Russia, Mexico, Uk, USA...). Up to **145 meetings** were arranged between the participants.

**European projects open workshops**

➤ **Super Cooled Large Droplets (SLD) Workshop organised by the ON-WINGS project:**

1<sup>st</sup> April 2011, 10h00-11h30, Bratislava Room

Within FP7, GKN and an opto-electronic focussed consortium are developing an optical ice detector to measure the presence of ice, the ice thickness and ice type. The equipment is tested under the particularly hazardous SLD (super cooled large droplet) conditions.

In the workshop, the optical ice detector technology was presented. There were a room for discussion about the new SLD rulemaking requirements, the need for testing facilities and the readiness of industry to respond to new requirements.

➤ **GIANT2 and HEDGE projects closing workshops:**

31<sup>st</sup> March 2011, 09h00-15h00, Bratislava Room

EGNOS, the European SBAS system and a technology enabler for SESAR, was certified for civil aviation on 2 March 2011. Since then, several FP7 and Ten-T projects have been demonstrating the benefits of this system and developed applications based on EGNOS. These projects were inviting the participants to learn about the outcomes of their research.

GIANT 2 is a follow-up to the GIANT project that focused on regional aviation. It has carried out successful flight demos in Spain and Italy that show the benefits of EGNOS for business and general aviation.

HEDGE developed and integrated applications for helicopters, both in off-shore operations (SOAP procedures) and in Search and Rescue situations (PINS procedures). Flight demos were successfully concluded off the coast of Scotland to oil rigs, at Swiss hospitals for Helicopter Emergency Medical Services (HEMS), in Spain for mountain rescue and in Poland for General Aviation.

**Students contest**

Aerodays 2011 was attended by two programmes for young students – with the goal to encourage future experts: an International Student Participation Programme and a Paper Plane Competition for pupils.

## **Paper Plane Competition “Taking off together and learning to fly”**

### ➤ Objectives:

The Paper Plane Competition took place in the context of the international event “Sixth European Aeronautics Days 2011” and is themed “taking off together and learning to fly”.

The Competition got organised to motivate young people for science and scientific research on aeronautics. This will be achieved by practical “research” on aerodynamics, combined with a fun activity among friends.

### ➤ Programme:

The paper planes were made of one single piece of paper and had been rated in the categories “longest distance” as well as “highest flight time”.

First round: INTA organized it for the school pupils, and Universidad Carlos III organized it for the university students.

Final: All winners of the first round proceeded to the joint final that was held the 30th of March, at Centro Deportivo de San Blas.

The award ceremony was chaired by Cristina Garmendia, Minister of Science and Innovation of Spain.

It was also a great opportunity to demonstrate the performance of the paper planes to an international audience.

### ➤ Addressees:

Pupils and school classes from Madrid were invited to participate in this competition, as well as university students

### ➤ Outcome

The Competition got organized to motivate young people for science and scientific research on aeronautics. This will be achieved by practical “research” on aerodynamics, combined with a fun activity among friends. This event was sponsored by INTA, CDTI, EADS, Carlos III University, Madrid Town hall.

## **International student participation programme**

### **Objectives:**

The main goal was to motivate young people for science and scientific research on aeronautics and to give a forum for the presentation of their work and research projects.

Aerodays 2011 was a place to network students with each other and with their future colleagues.



The three winners of the “Student Participation Programme” in the categories undergraduate, graduate and team projects once again presented their prize-winning posters and hold a talk on their project.

➤ Programme:

Ten minutes presentation within the conference of a poster (DIN A3), model or exhibit (in English). Technical and social student programme.

➤ Addressees:

The programme addresses students of aviation, physics, mechanical engineering and others in the field of aeronautics. Up to the age of 28 years, the students could be part of it – to the extent that they are citizen of the EU or student of a European university.

➤ Sponsorship for accepted students

- Technical Programme: congress sessions/exhibition
- Free travel and accommodation: allowance to travel expenses, accommodation at a selected hotel
- Social programme: students welcome (briefing), congress receptions
- Free three day access to the congress

The following schedule lists the overall timetable and deadlines for the application:

- Application deadline was 28 February 2011.
- Letters of acceptance or rejection was sent - we informed every applicant about acceptance or rejection of her/his application of participation in the Aeronautics Days 2011 Student Participation Programme.

Confirmation of participation deadline was still to be established- By then, every accepted student needed to confirm the participation at the conference. They could confirm their participation by fax, mail or e-mail.

➤ Outcome

More than 70 students participated in this special event, 34 European students from over ten different EU countries and two non-European students presented their projects. They had illustrated them with a poster and had the possibility to present their own topics within 15 minutes in an official speech.

## **Exhibition**

An exhibition of relevant projects related to the aeronautics and air transport sector through an open posters session was realized. This activity might be split into two different categories, one of them focused on the industry related aeronautical activities and the other one as an opportunity of showing the progress done in research in the last 20 years thanks to the European efforts to support the research with the European Framework Programmes.

The exhibition was opened during the whole duration of the event, for those interested to allocate their time to the activities that best suit with their interests. The aeronautics stakeholders, especially from the region, were offered to present relevant technologies (against cost contributions).

➤ Outcomes:

- Up to 2000 m2 for exhibition.
- The exhibition was divided into three main areas:
  - Sponsors (INDRA, Airbus, ITP, CESA, Tecnalia, Altran, Aernnova, Boeing, National Instruments, TecnoBit, Isdefe-Ineco, ITP)
  - EC projects (ACARE, AIRTN, ALICIA, SAFAR, LANDING, HISVESTA, COCOMAT, ALCAS, MOJO, SENARIO, VITAL, OPENAIR, DREAM, CLEAN-SKY, SESAR, EUROCONTROL, EGNOS...)
  - Young Scientists with posters as well.

### **European Research Programme**

The European Commission was exhibiting on the ground floor (in the main hall of the Conference Centre) a selection of European projects mainly developed under the Seventh European Research Framework Programme. The exhibition of the European Commission consists of the following information and project stands:

<u>INFO</u>	<u>PROJECTS</u>		
ACARE/AirTN/ GARTEUR Clean Sky	AISHA II	LANDING	RESTARTS
EASA	ALICIA	MOJO	SAFAR
Eurocontrol	COCOMAT	NACRE	SCARLETT
EGNOS	DREAM	NEWAC	SENARIO
SESAR	HISVESTA	OPENAIR & X- NOISE	VITA

### **Exhibition of sponsors and collaborating companies**

The Aerodays 2011 sponsors and collaborating companies were exhibiting their developments in the stands located on the ground floor, in the left hall of the Conference Centre. These include the following:

<b><u>Special sponsor:</u></b>
Comunidad de Madrid (Regional Government of Madrid), through its entity Madrid Network and its Aerospace cluster.
<b><u>Sponsors</u></b>

<b>Indra</b>		<b>EADS</b>		
<b><u>Collaborators</u></b>				
<b>Aernnova</b>	<b>Altran</b>	<b>Boeing</b>	<b>CESA</b>	<b>Tecnalia</b>
<b>Iberia</b>	<b>Isdefe-Ineco</b>	<b>ITP</b>	<b>National Instruments</b>	<b>Tecnobit</b>

#### 4.1.2.4.3 Conclusions

Some conclusions lessons learned and best practices that were obtained from the previous discussions were:

The following conclusions can be highlighted:

- 1) Aerodays 2011 had more than 1.400 attendees from 45 nationalities (10% non European).
- 2) 56 parallel sessions organized more than 220 speakers from 26 different countries.
- 3) Plenary speeches were given by high-level personalities (EC, Spanish Government, Airbus, AgustaWestland, ASD, AVIC, Boeing, Bombardier, DLR, EASA, FAA, Iberia, NASA, Safran, Superjet, etc.).
- 4) Great impact on the media: 90 journalists accredited, up to 300 interviews in press.
- 5) Linking the event to an outstanding momentum (FlightPath 2050 & Horizon2020).
- 6) All the comments received about the conference were of great satisfaction!

#### Some lessons learned to highlight:

The following lessons have been learned with respect to the organization of Aerodays 2011 in Madrid, together with some best practices that should be taken into account when organizing future sessions of aeronautics days in other places in Europe:

With respect to coordination, the European Commission and CDTI were organizing the event in a coordinated way. Being only two entities in charge of the organization provided easy management of the decisions, although the responsibilities and the efforts were also only shared by these two entities. Both organizers were highly experienced in organizing so large events.

In relation with the budget, the organization of the event kept a compromise between private and public efforts, although the search of sponsors was necessary.

Subcontractors were needed to support the organization, so CDTI opened a public call and selected a company that had experience in working with CDTI before.

The high level speakers were chosen realistically, and the high level Aerodays 2011 agenda was defined with enough time.

With respect to the sessions, the increase of the number of the parallel sessions increased also the complexity due to the time constraints, and involved having more people (hostesses and EC and CDTI representatives) in each session to have everything under control in case of emergency. A precise control of the time and avoiding starting the plenary sessions too early was a compromise to be taken.

In relation to press issues, a press programme was needed. No payment to any press media was done, which meant that no advertisements in international press were made.

Technical visits were very popular among participants, as well as for sponsors. This activity was the responsibility of the host.

With respect to registration, the online registration was available five months before the event.

In relation to the venue, the whole complex was available for the event, which meant that huge number of rooms with different capacity were to be used during Aerodays 2011. Organizing side events was possible.

The first Aerodays 2011 announcement was done nine months before the event, four newsletters were published starting three months before the event. Flyers were also distributed. Besides, dissemination of the event by other means was also available (EC, ASD, ACARE, CDTI, TPC, etc.).

With respect to logistics, standing-up cocktails were organized (versus sitting lunch), which allowed attendees to network and discuss on every aeronautical and Aerodays aspect. Side events and meetings (Brokerage event, students competition, official dinner) were organized by different entities, so that each could focus on a single aspect in order to allocate resources in an efficient manner.

#### **4.1.2.5 Potential impact and main dissemination activities and exploitation of results**

##### **4.1.2.6 Impact**

The European Research Area was created by the European Union in order to get an unified area across Europe that should inspire the best talents to enter research careers in Europe, incite industry to invest more in European research and strongly contribute to the creation of sustainable growth and jobs.

Technology Platforms were created to carry these ideas on and develop a research & innovation strategy in line with a long term vision that link European regions in order to achieve a real European integration. Thus, the European Aeronautical Technology Platform ACARE has produced a Strategy Research and Agenda (SRA), which sets challenges for industry through High Level Target Concepts. This Strategy is widely accepted and is reviewed at intervals to make sure it remains applicable in a rapidly changing world. The new ACARE launched a Flight 2050 to meet the needs of society while maintaining European global leadership in aeronautics, matching up in time with AERODAYS 2011: “Aeronautic Research Through the Framework Program: the key for a sustainable future”.

The conclusions of the conference will help to create a new forward looking sphere of action for the ERA and SRIA 2050, with high impact in every social, technical and political dimension.

The aeronautics and air transport sector is a key strategic economic domain for Europe, being the development of its associated technology one of the main responsible for society transformation over the past 100 years, as well as enabling the evolution of aviation. It is –at the same time- crucial to the prosperity of Europe, both in terms of economic growth as well as of quality of life. Taking these facts into account, and being known that the European research in aeronautics has the role of maintaining and increasing the efficiency of the air transport, this event will bring the main stakeholders of the aeronautics sector to show the progress of the research and development of the aeronautics projects launched within the first and second FP7 aeronautical calls, as well as to discuss common future R&D projects and share, teach, value and use knowledge effectively for social, business and policy purposes.

The Aerodays 2011 event will also provide a world-level forum for information exchange and dissemination of EU-funded R&D results in aeronautics, developing strong links with partners around the world, so that Europe benefit from the worldwide progress of knowledge, contribute to global development and take a leading role in international initiatives to solve global issues.

The event will show the opportunities that the aeronautics sector gives, due to its strategic character and high potential. The participation of the main European representatives, both institutional and industrial-, of the aeronautics and air transport sector including airports and airlines, as well as experts from fields such Space and Security is expected.

It is worthy to be mentioned that the impact to be reached within this event would never be obtained through a national or local approach, and hence the European dimension is crucial for obtaining an

outstanding success; furthermore, this event should optimise and open European, national and regional research programmes in order to support and coordinate the best research throughout Europe through strategic programmes to address major challenges together.

This support action aims to contribute to the implementation of the Framework Programmes and the preparation of the future research community and technological development policies and look for synergies with other policies, as well as stimulate, encourage and facilitate the participation of SMEs, civil society and other actors.

In order to extent the impact of this Aerodays event, CDTI worked together with european aeronautical organizations (such as CEAS and EREA, among others) as well as with multinational aeronautical entities like EADS, BOEING, etc. The event was supported by others European initiatives like E-CAero, AirTN, GARTEUR, Cooperatus etc.

Regarding international impact, Aerodays focused on an international public, with the participation of international Authorities from Canada, China, Japan, India, Brazil, etc...- and companies –such as Embraer, Bombardier, Hindustan Aeronautic, AVIC, etc.

SMEs had an important role in the Aerodays event. Considering Aerodays conferences served as the perfect means of dissemination of the highest political messages, SMEs focused on aeronautical activities are specific target audience of the event, with the goal of absorbing the top messages and consider them when elaborating their own agendas.

Besides, the event was covered by specialized press, in order to connect with target audience all over the world.

#### **4.1.2.7 Dissemination and exploitation of project results, and management of intellectual property**

The conference per se included the engagement of stakeholders from academia, industry, society and politics from Europe and beyond to brainstorm and bring out recommendations on the subject. The conference brought out the social aspect of R&D, whose objective is to raise the awareness by building communication channels amongst research community and policy rulers for a good guarantee of inclusion of aeronautic issues into the R&D policies.

Furthermore, in order to show and disseminate the outcomes obtained in the conference, a workshop in Brussels was organised, whose results, as well as the report of the conference was published.

The dissemination activities organized before the event was held, planned with the goal of attracting the audience to take part to the event, were the following ones:

First of all, a website ([www.aerodays2011.org](http://www.aerodays2011.org)) was created to contain every kind of information with respect to Aerodays. This website was activated from September 2010, and every updated information with respect to the event was included in the website.

Four newsletters were published, in January, February, March and April 2011. Apart from giving some practical advice about Aerodays 2011, the first newsletter announced some high level people who had already confirmed their participation to the event, and introduced the technical visits as well

as the brokerage event to be organized during Aerodays 2011. Newsletter number 2 gave shape to the plenary and parallel sessions, the exhibition to be shown during the event and the registration to the brokerage event. Newsletter number 3 gave information about the social events to be organized around Aerodays 2011, and announced places left to still join the technical visits. And finally newsletter 4, published after Aerodays 2011 was held, made a summary of the main successes of the event, informed about the announcement of the Flightpath 2050 as well as the winners of the young scientist competition.

Besides the newsletters, 2 paper flyers were edited to promote Aerodays 2011. A preliminary one was published and distributed 3 months before the event took place. It contained some key issues of the conference and some practical information. The second edition of the flyer was published and distributed 2 weeks before the event itself, and contained the final programme of Aerodays 2011.

During the event, and prior to the registration to the event onsite, a package with information (map of the conference site, final programme, book of abstracts, etc.) was distributed to the audience.

### 4.1.3 Project public website.

A dedicated Website for the event was made for the whole congress. The address of Aerodays2011 website is: <http://www.aerodays2011.org/ingles/index.cfm> and it is still operative. The website will manage the complete event, it was an outstanding way of media communication for the event, and will provide full of services for instance: online registration, upload abstracts and presentations for speakers, technical and practical information, News, download section and much more.



Figure 1.- Aerodays Website

The Website includes different sections that cover the whole event (registration, programme, technical visits, download...), below some snapshot of different sections of the website are depicted:



# SOCIAL EVENTS



Figure 2.- Aerodays Website – Social Events

**PROGRAMME (Including the possibility to download all presentations that took place during the event)**



Figure 3.- Aerodays Website - Programme

# PRACTICAL INFORMATION



Figure 4.- Aerodays Website – Practical Information

# TECHNICAL VISITS

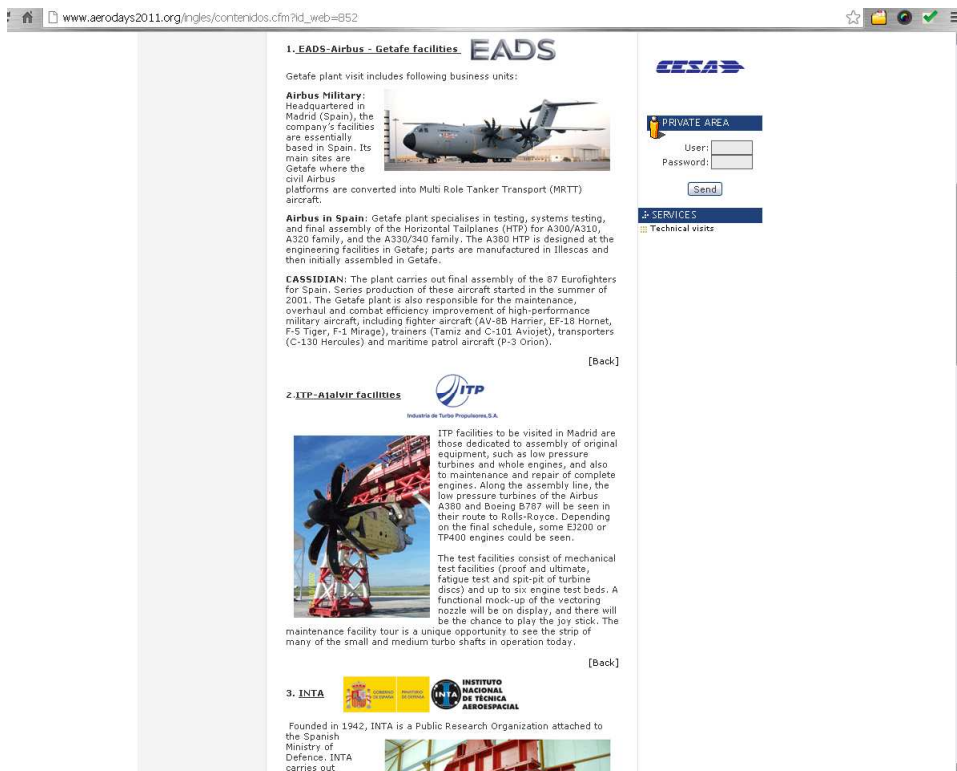


Figure 5.- Aerodays Website – Technical visits

# STUDENTS CONTEST

www.aerodays2011.org/ingles/contenidos.cfm?id\_web=854

**Madrid**

**Objectives**

The Paper Plane Competition will take place in the context of the international event "Sixth European Aeronautics Days 2011" and is themed "taking off together and learning to fly".

The Competition gets organised to motivate young people for science and scientific research on aeronautics. This will be achieved by practical "research" on aerodynamics, combined with a fun activity among friends.

**Programme**

The paper planes are made of one single piece of paper and will be rated in the categories "longest distance" as well as "highest flight time".

First round: INTA will organize it for the school pupils, and Universidad Carlos III will organize it for the university students.

Final: All winners of the first round will proceed to the joint final that will be held the 30<sup>th</sup> of March, at Centro Deportivo de San Blas.

The award ceremony will be chaired by Cristina Garmendia, Minister of Science and Innovation of Spain.

It will be also a great opportunity to demonstrate the performance of the paper planes to an international audience.

**Addresses**

Pupils and school classes from Madrid are invited to participate in this competition, as well as university students.

[Rules of the paper planes competition \(in Spanish\)](#)

**International Student Participation Programme**

**Objectives**

The main goal is to motivate young people for science and scientific research on aeronautics and to give a forum for the presentation of their work and research projects.

Aerodays 2011 will be a place to network students with each other and with their future colleagues.

The three winners of the "Student Participation Programme" in the categories undergraduate, graduate and team projects will once again present their prize-winning posters and hold a talk on their project.





Figure 6.- Aerodays Website – Students Contest

## 4.2 Use and dissemination of foreground

In order to show and disseminate the outcomes obtained in the conference, a workshop in Brussels was organised, whose results, as well as the report of the conference was published.

Four newsletters were published, in January, February, March and April 2011. Apart from giving some practical advice about Aerodays 2011, the first newsletter announced some high level people who had already confirmed their participation to the event, and introduced the technical visits as well as the brokerage event to be organized during Aerodays 2011. Newsletter number 2 gave shape to the plenary and parallel sessions, the exhibition to be shown during the event and the registration to the brokerage event. Newsletter number 3 gave information about the social events to be organized around Aerodays 2011, and announced places left to still join the technical visits. And finally newsletter 4, published after Aerodays 2011 was held, made a summary of the main successes of the event, informed about the announcement of the Flightpath 2050 as well as the winners of the young scientist competition.

Besides the newsletters, 2 paper flyers were edited to promote Aerodays 2011. A preliminary one was published and distributed 3 months before the event took place. It contained some key issues of the conference and some practical information. The second edition of the flyer was published and distributed 2 weeks before the event itself, and contained the final programme of Aerodays 2011.

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- **Section A**

**Section A (public)**

TEMPLATE A2: LIST OF DISSEMINATION ACTIVITIES								
NO	Type of activities	Main leader	Title	Date/Period	Place	Type of audience	Size of audience	Countries addressed
1	Conference	CDTI/EC	<i>Aerodays 2011:</i> Innovation for a Sustainable Aviation in a Global Environment	<i>30<sup>th</sup> March, 31<sup>st</sup> March and 1<sup>st</sup> April</i>	<i>Madrid</i>	Aeronautical sector: Industry, Policy makers, Medias, Scientific Community (higher education, Research)	<i>Around 1.200 people</i>	<i>Europe and beyond</i>
2	Publication	CDTI/EC	Newsletter 1	January 2011	Online	Aeronautical sector: Industry, Policy makers, Medias, Scientific Community (higher education, Research)		<i>Europe and beyond</i>

3	Publication	<i>CDTI/EC</i>	Newsletter 2	February 2011	Online	Aeronautical sector: Industry, Policy makers, Medias, Scientific Community (higher education, Research)		<i>Europe and beyond</i>
4	Publication	<i>CDTI/EC</i>	Newsletter 3	March 2011	Online	Aeronautical sector: Industry, Policy makers, Medias, Scientific Community (higher education, Research)		<i>Europe and beyond</i>
5	Publication	<i>CDTI/EC</i>	Newsletter 4	April 2011	Online	Aeronautical sector: Industry, Policy makers, Medias, Scientific Community (higher education, Research)		<i>Europe and beyond</i>
6	Workshop	<i>CDTI/EC</i>	Dissemination final workshop	January 2012	Brussels	European Commission, CDTI, Expert Panel	<i>Around 30 people</i>	<i>Europe</i>

7	Website	<i>CDTI/EC</i>	Official Aerodays 2011 website	September 2010	Online	Aeronautical sector: Industry, Policy makers, Medias, Scientific Community (higher education, Research)	Public	
8	Publication	<i>CDTI/EC</i>	Flyer 1	January 2011		Aeronautical sector: Industry, Policy makers, Medias, Scientific Community (higher education, Research)		<i>Europe and beyond</i>
9	Publication	<i>CDTI/EC</i>	Flyer 2	February 2011		Aeronautical sector: Industry, Policy makers, Medias, Scientific Community (higher education, Research)		<i>Europe and beyond</i>

*\*Note: Due to size restrictions, the table A2 does not include all the press releases, articles published in the press, videos, media briefings, presentations, exhibitions, thesis, interviews, films, TV clips or posters. The organizers of Aerodays 2011 elaborated and specific document that summarizes every communication action pursued during the preparation of Aerodays 2011 and once the event was finished. The document is called Aerodays\_Communication\_Report and is included in the documentation package delivered for the final evaluation and reporting of Aerodays 2011*

### 4.3 Report on societal implications

Replies to the following questions will assist the Commission to obtain statistics and indicators on societal and socio-economic issues addressed by projects. The questions are arranged in a number of key themes. As well as producing certain statistics, the replies will also help identify those projects that have shown a real engagement with wider societal issues, and thereby identify interesting approaches to these issues and best practices. The replies for individual projects will not be made public.

<b>A General Information</b> <i>(completed automatically when Grant Agreement number is entered.)</i>	
<b>Grant Agreement Number:</b>	264602
<b>Title of Project:</b>	AERODAYS2011 – Innovation for a Sustainable Aviation in a Global Environment
<b>Name and Title of Coordinator:</b>	Eva Martínez Pradel, Directorate of Global Innovative Markets, CENTRO PARA EL DESARROLLO TECNOLÓGICO INDUSTRIAL (CDTI)
<b>B Ethics</b>	
<p><b>1. Did your project undergo an Ethics Review (and/or Screening)?</b></p> <ul style="list-style-type: none"> <li>If Yes: have you described the progress of compliance with the relevant Ethics Review/Screening Requirements in the frame of the periodic/final project reports?</li> </ul> <p>Special Reminder: the progress of compliance with the Ethics Review/Screening Requirements should be described in the Period/Final Project Reports under the Section 3.2.2 'Work Progress and Achievements'</p>	<p><i>0Yes</i> <i>XNo</i></p>
<p><b>2. Please indicate whether your project involved any of the following issues (tick box) :</b></p> <p><b>RESEARCH ON HUMANS</b></p> <ul style="list-style-type: none"> <li>Did the project involve children?</li> <li>Did the project involve patients?</li> <li>Did the project involve persons not able to give consent?</li> <li>Did the project involve adult healthy volunteers?</li> <li>Did the project involve Human genetic material?</li> <li>Did the project involve Human biological samples?</li> <li>Did the project involve Human data collection?</li> </ul> <p><b>RESEARCH ON HUMAN EMBRYO/FOETUS</b></p> <ul style="list-style-type: none"> <li>Did the project involve Human Embryos?</li> <li>Did the project involve Human Foetal Tissue / Cells?</li> <li>Did the project involve Human Embryonic Stem Cells (hESCs)?</li> </ul>	<p><i>No</i></p>



• Did the project on human Embryonic Stem Cells involve cells in culture?		
• Did the project on human Embryonic Stem Cells involve the derivation of cells from Embryos?		
<b>PRIVACY</b>		
• Did the project involve processing of genetic information or personal data (eg. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)?		
• Did the project involve tracking the location or observation of people?		
<b>RESEARCH ON ANIMALS</b>		
• Did the project involve research on animals?		
• Were those animals transgenic small laboratory animals?		
• Were those animals transgenic farm animals?		
• Were those animals cloned farm animals?		
• Were those animals non-human primates?		
<b>RESEARCH INVOLVING DEVELOPING COUNTRIES</b>		
• Did the project involve the use of local resources (genetic, animal, plant etc)?		
• Was the project of benefit to local community (capacity building, access to healthcare, education etc)?		
<b>DUAL USE</b>		
• Research having direct military use	0 Yes X No	
• Research having the potential for terrorist abuse		
<b>C Workforce Statistics</b>		
<b>3. Workforce statistics for the project: Please indicate in the table below the number of people who worked on the project (on a headcount basis).</b>		
<b>Type of Position</b>	<b>Number of Women</b>	<b>Number of Men</b>
Scientific Coordinator	1	
Work package leaders	1	
Experienced researchers (i.e. PhD holders)	1	4
PhD Students	0	0
Other	0	0
<b>4. How many additional researchers (in companies and universities) were recruited specifically for this project?</b>	<b>0</b>	
Of which, indicate the number of men:	0	

D Gender Aspects		
<b>5. Did you carry out specific Gender Equality Actions under the project?</b>	<input type="radio"/> X	Yes No
<b>6. Which of the following actions did you carry out and how effective were they?</b>		
	<b>Not at all effective</b>	<b>Very effecti ve</b>
<input type="checkbox"/> Design and implement an equal opportunity policy	○ ○ ○ ○ ○	○ ○ ○ ○ ○
<input type="checkbox"/> Set targets to achieve a gender balance in the workforce	○ ○ ○ ○ ○	○ ○ ○ ○ ○
<input type="checkbox"/> Organise conferences and workshops on gender	○ ○ ○ ○ ○	○ ○ ○ ○ ○
<input type="checkbox"/> Actions to improve work-life balance	○ ○ ○ ○ ○	○ ○ ○ ○ ○
<input type="radio"/> Other: <input style="width: 150px;" type="text"/>		
<b>7. Was there a gender dimension associated with the research content – i.e. wherever people were the focus of the research as, for example, consumers, users, patients or in trials, was the issue of gender considered and addressed?</b>		
<input type="radio"/> Yes- please specify <input style="width: 150px;" type="text"/>		
<input checked="" type="radio"/> No		
E Synergies with Science Education		
<b>8. Did your project involve working with students and/or school pupils (e.g. open days, participation in science festivals and events, prizes/competitions or joint projects)?</b>		
<input checked="" type="radio"/> Yes- please specify <input style="width: 150px;" type="text"/>		
<input type="radio"/> No		
<b>9. Did the project generate any science education material (e.g. kits, websites, explanatory booklets, DVDs)?</b>		
<input type="radio"/> Yes- please specify <input style="width: 150px;" type="text"/>		
<input checked="" type="radio"/> No		
F Interdisciplinarity		
<b>10. Which disciplines (see list below) are involved in your project?</b>		
<input type="radio"/> Main discipline <sup>2</sup> :		
<input type="radio"/> Associated discipline <sup>2</sup> :	<input type="radio"/>	Associated discipline <sup>2</sup> :
G Engaging with Civil society and policy makers		
<b>11a Did your project engage with societal actors beyond the research community? (if 'No', go to Question 14)</b>	<input type="radio"/> X	Yes No
<b>11b If yes, did you engage with citizens (citizens' panels / juries) or organised civil society (NGOs, patients' groups etc.)?</b>		
<input type="radio"/> No		
<input type="radio"/> Yes- in determining what research should be performed		

<sup>2</sup> Insert number from list below (Frascati Manual).

<input type="radio"/> Yes - in implementing the research <input type="radio"/> Yes, in communicating /disseminating / using the results of the project	
<b>11c In doing so, did your project involve actors whose role is mainly to organise the dialogue with citizens and organised civil society (e.g. professional mediator; communication company, science museums)?</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No
<b>12. Did you engage with government / public bodies or policy makers (including international organisations)</b>	
<input checked="" type="radio"/> No <input type="radio"/> Yes- in framing the research agenda <input type="radio"/> Yes - in implementing the research agenda <input type="radio"/> Yes, in communicating /disseminating / using the results of the project	
<b>13a Will the project generate outputs (expertise or scientific advice) which could be used by policy makers?</b>	
<input checked="" type="radio"/> Yes – as a <b>primary</b> objective (please indicate areas below- multiple answers possible) <input type="radio"/> Yes – as a <b>secondary</b> objective (please indicate areas below - multiple answer possible) <input type="radio"/> No	
<b>13b If Yes, in which fields?</b>	
Agriculture Audiovisual and Media Budget Competition Consumers Culture Customs Development Economic and Monetary Affairs Education, Training, Youth Employment and Social Affairs	Energy Enlargement Enterprise Environment External Relations External Trade Fisheries and Maritime Affairs Food Safety Foreign and Security Policy Fraud Humanitarian aid
	<input checked="" type="checkbox"/>
	Human rights Information Society Institutional affairs Internal Market Justice, freedom and security Public Health Regional Policy Research and Innovation Space Taxation Transport

<b>13c If Yes, at which level?</b> <input type="radio"/> Local / regional levels <input type="radio"/> National level <input checked="" type="radio"/> European level <input type="radio"/> International level		
<b>H Use and dissemination</b>		
<b>14. How many Articles were published/accepted for publication in peer-reviewed journals?</b>	<b>0</b>	
<b>To how many of these is open access<sup>3</sup> provided?</b>		
<b>How many of these are published in open access journals?</b>	<b>0</b>	
<b>How many of these are published in open repositories?</b>		
<b>To how many of these is open access not provided?</b>		
<b>Please check all applicable reasons for not providing open access:</b>		
<input type="checkbox"/> publisher's licensing agreement would not permit publishing in a repository <input type="checkbox"/> no suitable repository available <input type="checkbox"/> no suitable open access journal available <input type="checkbox"/> no funds available to publish in an open access journal <input type="checkbox"/> lack of time and resources <input type="checkbox"/> lack of information on open access <input type="checkbox"/> other <sup>4</sup> : .....		
<b>15. How many new patent applications ('priority filings') have been made? ("Technologically unique": multiple applications for the same invention in different jurisdictions should be counted as just one application of grant).</b>	<b>0</b>	
<b>16. Indicate how many of the following Intellectual Property Rights were applied for (give number in each box).</b>	Trademark	
	Registered design	
	Other	
<b>17. How many spin-off companies were created / are planned as a direct result of the project?</b>	<b>0</b>	
<i>Indicate the approximate number of additional jobs in these companies:</i>		<b>0</b>
<b>18. Please indicate whether your project has a potential impact on employment, in comparison with the situation before your project:</b>		
<input type="checkbox"/> Increase in employment, or <input type="checkbox"/> Safeguard employment, or <input type="checkbox"/> Decrease in employment, <input type="checkbox"/> Difficult to estimate / not possible to quantify	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	In small & medium-sized enterprises In large companies None of the above / not relevant to the project

<sup>3</sup> Open Access is defined as free of charge access for anyone via Internet.

<sup>4</sup> For instance: classification for security project.

<p><b>19. For your project partnership please estimate the employment effect resulting directly from your participation in Full Time Equivalent (FTE = one person working fulltime for a year) jobs:</b></p> <p>Difficult to estimate / not possible to quantify</p>	<p><i>Indicate figure:</i></p> <p><input type="checkbox"/></p>		
<p><b>I Media and Communication to the general public</b></p>			
<p><b>20. As part of the project, were any of the beneficiaries professionals in communication or media relations?</b></p> <p><input type="radio"/> Yes <input checked="" type="radio"/> No</p>			
<p><b>21. As part of the project, have any beneficiaries received professional media / communication training / advice to improve communication with the general public?</b></p> <p><input type="radio"/> Yes <input checked="" type="radio"/> No</p>			
<p><b>22 Which of the following have been used to communicate information about your project to the general public, or have resulted from your project?</b></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Press Release  <input checked="" type="checkbox"/> Media briefing  <input type="checkbox"/> TV coverage / report  <input type="checkbox"/> Radio coverage / report  <input checked="" type="checkbox"/> Brochures / posters / flyers  <input checked="" type="checkbox"/> DVD /Film /Multimedia         </td> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Coverage in specialist press  <input type="checkbox"/> Coverage in general (non-specialist) press  <input type="checkbox"/> Coverage in national press  <input type="checkbox"/> Coverage in international press  <input checked="" type="checkbox"/> Website for the general public / internet  <input type="checkbox"/> Event targeting general public (festival, conference, exhibition, science café)         </td> </tr> </table>		<input checked="" type="checkbox"/> Press Release <input checked="" type="checkbox"/> Media briefing <input type="checkbox"/> TV coverage / report <input type="checkbox"/> Radio coverage / report <input checked="" type="checkbox"/> Brochures / posters / flyers <input checked="" type="checkbox"/> DVD /Film /Multimedia	<input checked="" type="checkbox"/> Coverage in specialist press <input type="checkbox"/> Coverage in general (non-specialist) press <input type="checkbox"/> Coverage in national press <input type="checkbox"/> Coverage in international press <input checked="" type="checkbox"/> Website for the general public / internet <input type="checkbox"/> Event targeting general public (festival, conference, exhibition, science café)
<input checked="" type="checkbox"/> Press Release <input checked="" type="checkbox"/> Media briefing <input type="checkbox"/> TV coverage / report <input type="checkbox"/> Radio coverage / report <input checked="" type="checkbox"/> Brochures / posters / flyers <input checked="" type="checkbox"/> DVD /Film /Multimedia	<input checked="" type="checkbox"/> Coverage in specialist press <input type="checkbox"/> Coverage in general (non-specialist) press <input type="checkbox"/> Coverage in national press <input type="checkbox"/> Coverage in international press <input checked="" type="checkbox"/> Website for the general public / internet <input type="checkbox"/> Event targeting general public (festival, conference, exhibition, science café)		
<p><b>23 In which languages are the information products for the general public produced?</b></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Language of the coordinator  <input type="checkbox"/> Other language(s)         </td> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> English         </td> </tr> </table>		<input checked="" type="checkbox"/> Language of the coordinator <input type="checkbox"/> Other language(s)	<input checked="" type="checkbox"/> English
<input checked="" type="checkbox"/> Language of the coordinator <input type="checkbox"/> Other language(s)	<input checked="" type="checkbox"/> English		

**Question F-10:** Classification of Scientific Disciplines according to the Frascati Manual 2002 (Proposed Standard Practice for Surveys on Research and Experimental Development, OECD 2002):

**FIELDS OF SCIENCE AND TECHNOLOGY**

1. NATURAL SCIENCES

- 1.1 Mathematics and computer sciences [mathematics and other allied fields: computer sciences and other allied subjects (software development only; hardware development should be classified in the engineering fields)]
- 1.2 Physical sciences (astronomy and space sciences, physics and other allied subjects)
- 1.3 Chemical sciences (chemistry, other allied subjects)
- 1.4 Earth and related environmental sciences (geology, geophysics, mineralogy, physical geography and other geosciences, meteorology and other atmospheric sciences including climatic research, oceanography, vulcanology, palaeoecology, other allied sciences)

- 1.5 Biological sciences (biology, botany, bacteriology, microbiology, zoology, entomology, genetics, biochemistry, biophysics, other allied sciences, excluding clinical and veterinary sciences)

## 2 ENGINEERING AND TECHNOLOGY

- 2.1 Civil engineering (architecture engineering, building science and engineering, construction engineering, municipal and structural engineering and other allied subjects)
- 2.2 Electrical engineering, electronics [electrical engineering, electronics, communication engineering and systems, computer engineering (hardware only) and other allied subjects]
- 2.3. Other engineering sciences (such as chemical, aeronautical and space, mechanical, metallurgical and materials engineering, and their specialised subdivisions; forest products; applied sciences such as geodesy, industrial chemistry, etc.; the science and technology of food production; specialised technologies of interdisciplinary fields, e.g. systems analysis, metallurgy, mining, textile technology and other applied subjects)

## 3. MEDICAL SCIENCES

- 3.1 Basic medicine (anatomy, cytology, physiology, genetics, pharmacy, pharmacology, toxicology, immunology and immuno-haematology, clinical chemistry, clinical microbiology, pathology)
- 3.2 Clinical medicine (anaesthesiology, paediatrics, obstetrics and gynaecology, internal medicine, surgery, dentistry, neurology, psychiatry, radiology, therapeutics, otorhinolaryngology, ophthalmology)
- 3.3 Health sciences (public health services, social medicine, hygiene, nursing, epidemiology)

## 4. AGRICULTURAL SCIENCES

- 4.1 Agriculture, forestry, fisheries and allied sciences (agronomy, animal husbandry, fisheries, forestry, horticulture, other allied subjects)
- 4.2 Veterinary medicine

## 5. SOCIAL SCIENCES

- 5.1 Psychology
- 5.2 Economics
- 5.3 Educational sciences (education and training and other allied subjects)
- 5.4 Other social sciences [anthropology (social and cultural) and ethnology, demography, geography (human, economic and social), town and country planning, management, law, linguistics, political sciences, sociology, organisation and methods, miscellaneous social sciences and interdisciplinary, methodological and historical SIT activities relating to subjects in this group. Physical anthropology, physical geography and psychophysiology should normally be classified with the natural sciences].

## 6. HUMANITIES

- 6.1 History (history, prehistory and history, together with auxiliary historical disciplines such as archaeology, numismatics, palaeography, genealogy, etc.)
- 6.2 Languages and literature (ancient and modern)
- 6.3 Other humanities [philosophy (including the history of science and technology) arts, history of art, art criticism, painting, sculpture, musicology, dramatic art excluding artistic "research" of any kind, religion, theology, other fields and subjects pertaining

to the humanities, methodological, historical and other SIT activities relating to the subjects in this group]

**1. FINAL REPORT ON THE DISTRIBUTION OF THE EUROPEAN UNION FINANCIAL CONTRIBUTION**

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This report shall be submitted to the Commission within 30 days after receipt of the final payment of the European Union financial contribution.

**Report on the distribution of the European Union financial contribution between beneficiaries**

Name of beneficiary	Final amount of EU contribution per beneficiary in Euros
1. <i>CENTRO PARA EL DESARROLLO TECNOLÓGICO INDUSTRIAL</i>	<i>420.000</i>
Total	<i>420.000</i>